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EFFECT OF A HIGHWAY ON THE MARKET VALUES OF ADJOINING RESIDENTIAL PROPERTY

THE accurate measurement of the effect of economic obsolescence on market value is one of the most difficult problems involved in residential appraising.* Most texts outline a procedure based on an analysis of estimated rental income which would prevail if the defect did not exist. The estimated loss in annual income is then capitalized to arrive at the amount of economic obsolescence.

But this system is not too practical when the appraisal involves a single-family residence or a two-family flat. The vast majority of residences are owner occupied, which usually prevents the collection of adequate rental data. Furthermore, single-family residences and even two-family buildings are not normally held as investment property, which makes income analysis more hypothetical than realistic. One unit of a two-family dwelling is frequently occupied by the owner, and in order to keep a desirable tenant a concession is made in the amount of rent charged. All of this complicates the matter of determining the fair economic rent that would prevail if the feature of obsolescence did not exist. The technique of capitalizing rent loss has to be discarded in most instances for these reasons.

A more direct and realistic approach to the problem is attained by reference to market data. This procedure involves the collection of two sets of market data. One set will include properties which come under the adverse influence and the other will include those similar in other respects except that they lie outside of its scope of influence.

We recently employed this technique in the appraisal of properties which adjoin a four-lane interurban highway carrying in excess of 50,000 vehicles per day to and from a metropolitan area. The roadway is in a cut about twenty-five feet below ground level and is enclosed by concrete retaining walls. This has two effects. It hides the traffic from view at ground level and confines most of the traffic noise to the area along the perimeter of the right-of-way. The noise

*Economic obsolescence may be defined as a loss in value caused by factors external to a property. These may range from the obvious example of a fine quality residence located next to a glue factory to the more obscure case of a residence located on a street with restricted parking.

is intense at the edge of the highway and is considerably diminished at a distance of more than 200 feet.

The neighborhood studied is composed mostly of two-family flats. There are a few single-family residences and small apartment buildings, as well as a few commercial buildings. The buildings are all between 45 and 50 years old and have received adequate maintenance. Although some of the two-family flats are now used for multiple tenancy, there is no evidence of a transition to occupancy by persons of a lower economic or cultural status.

The procedure followed was to collect market data by physical inspection of the buildings and interrogation of the owners of properties closely comparable in most physical characteristics to the properties under study. All the buildings are two-family brick flats of two-story height. An effort was made to match buildings of similar size and age in making the comparisons. Then adjustments were made in each case for those factors which differ from the subject. If the comparable property has a characteristic which makes it less valuable than the subject, then an addition is made to its purchase price to reflect the fact that the subject property is more valuable in this respect. If the comparable contains a feature making it more valuable, then a subtraction is made to reflect the lack of this feature in the subject property. The sum of these variations yields an "indicated relative value" for the subject property. If done correctly, there is normally a relatively close agreement between this "indicated value" and the actual market value as evidenced by sales price.

Of the properties which are in close proximity to the highway, four have been sold since 1955. A comparative analysis was made between each of these four with two similar properties which sold in recent years but which are more remote from the highway. The following is a detailed outline of the adjustments made for differences in physical characteristics between each subject property and two comparables.

Subject #1. The 2-family flat contains 9 rooms and 2 baths in 2,260 square feet of living space. It is 58 years old and in average condition. It has one gas conversion unit and one hand-fired furnace. There is no garage. The lot size is 30' x 180'. (Building is 75' from right-of-way.)

Purchased: 8/22/56	Purchase Price	$10,500
Comparable #1a (500' from right-of-way)	Purchase Price	$12,000
Living space: 9 rooms, 2 baths, 2,160 sq. ft.		+400
Age & condition: 51 years; average		-500
Heat: 2 gas conversion units (for 1 unit)		-200
Garage: 2-car, frame		-500
Lot size: 25' x 133'		+400
Date of sale: 4/10/56		0
	Indicated Relative Value of Subject	$11,600

Comparable #1b (335' from right-of-way) Purchase Price	$12,950
Living space: 9 rooms, 2 baths, 2,208 sq. ft.	0
Age & condition: 55 years; good	-700
Heat: 2 hand-fired furnaces (add for 1 conversion unit)	+200
Garage: 2-car, frame	-500
Lot size: 25' x 180'	+200
Date of sale: 12/4/55	+100
Indicated Relative Value of Subject	$12,250

Subject #2. The building contains 9 rooms and 2 baths in 2,416 square feet of living area. It is 57 years old and in fair condition. It has 2 hand-fired furnaces. There is a 2-car frame garage. The lot size is 30' x 187'. (This building is 110' from right-of-way.)

Purchased: 3/26/57 Purchase Price	$10,500

Comparable #2a (500' from right-of-way) Purchase Price	$12,000
Living space: 9 rooms, 2 baths, 2,160 sq. ft.	+750
Age & condition: 51 years; average	-1,100
Heat: 2 hand-fired furnaces	0
Garage: 2-car, frame	0
Lot size: 25' x 133'	+200
Date of sale: 2/24/56 (add 1% of $12,000) say	+100
Indicated Relative Value of Subject	$11,950

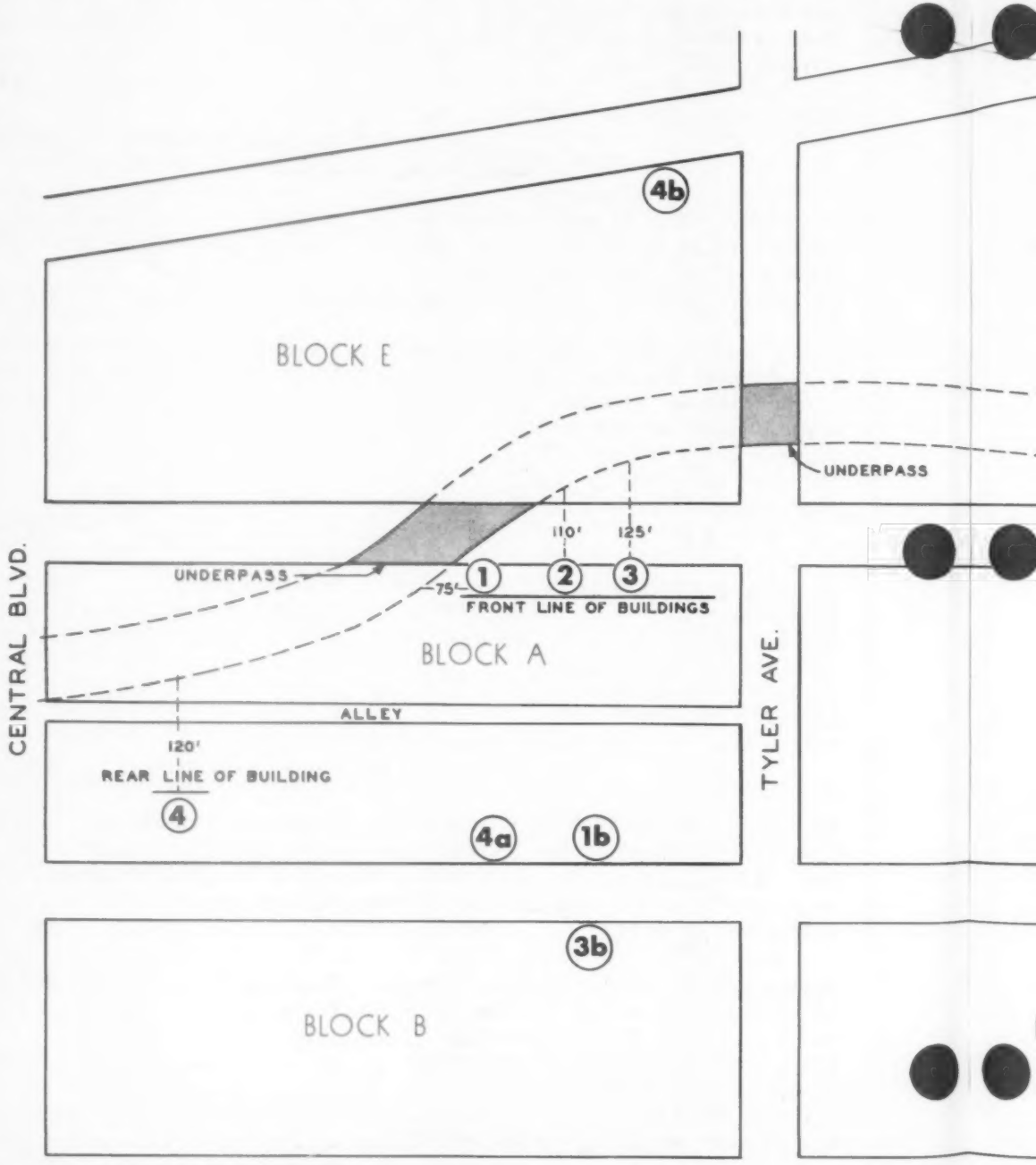
Comparable #2b (625' from right-of-way) Purchase Price	$15,000
Living space: 10 rooms, 2 baths, 2,875 sq. ft. (includes third flr. room)	-1,500
Age & condition: 55 years; average	-900
Heat: 2 hand-fired furnaces	0
Garage: 2-car, frame	0
Lot size: 25' x 133'	+200
Date of sale: 3/24/58 (deduct 2% of $15,000)	-300
Indicated Relative Value of Subject	$12,500

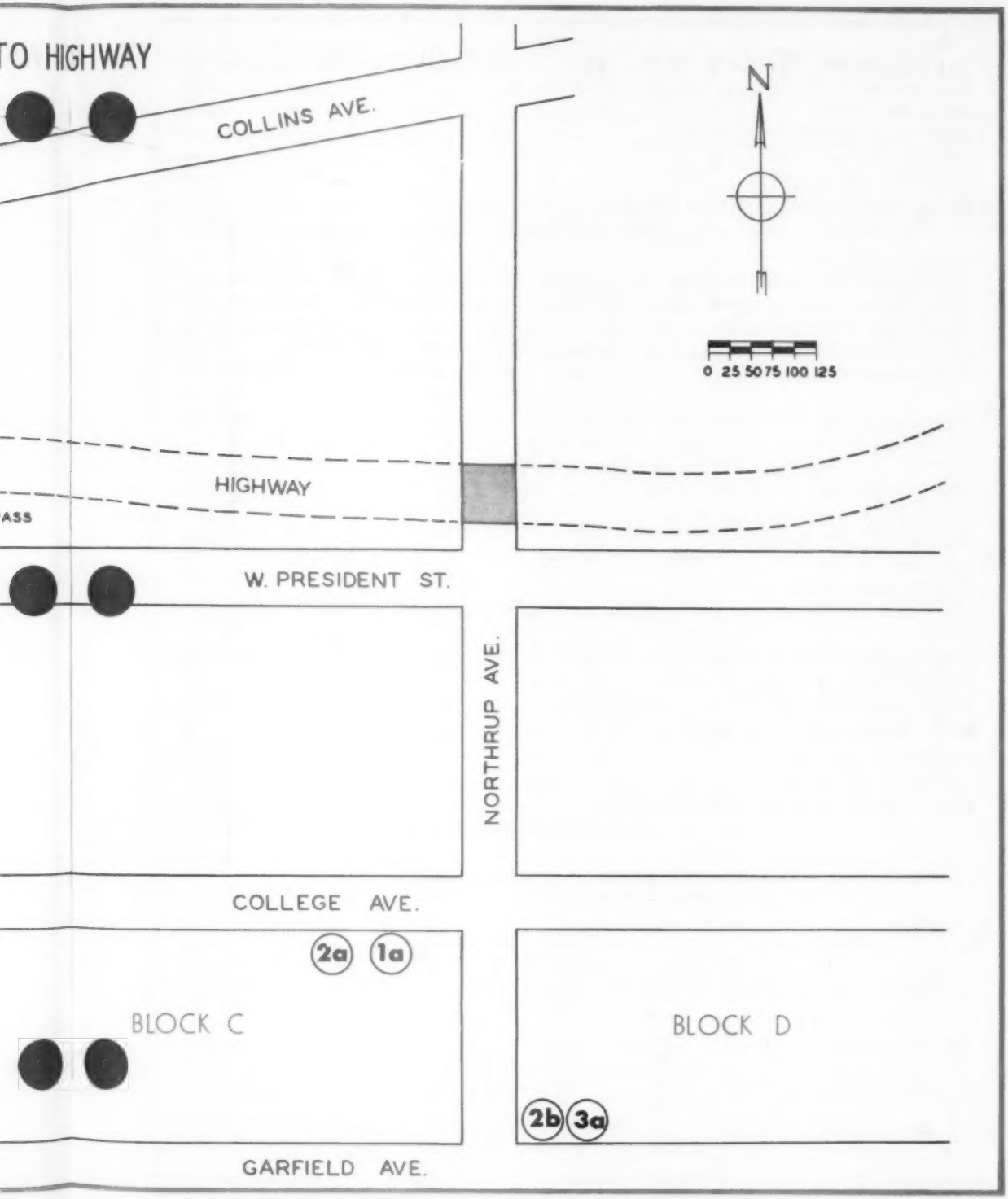
Subject #3. The building contains 9 rooms, 2 sunrooms, and 2 baths in 2,680 square feet of living space. It is 54 years old and in average condition for its age. It has 2 gas conversion burners. There is a 2-car frame garage. The lot size is 30' x 125'. (Building is 125' from right-of-way.)

Purchased: 3/25/55 Purchase Price	$12,600

Comparable #3a (625' from right-of-way) Purchase Price	$14,500
Living space: 11 rooms, 2 baths, 2,790 sq. ft.	-400
Age & condition: 54 years; average	0
Heat: 1 oil conversion unit and 1 stoker	+100
Garage: 2-car, frame	0
Lot size: 25' x 133'	+200
Date of sale: 10/9/59 (4% x $14,500)	-600
Indicated Relative Value of Subject	$13,800

PLAT SHOWING LOCATION OF BUILDINGS IN RELATION TO HIGHWA




TO HIGHWAY
COLLINS AVE.
N
0 25 50 75 100 125
HIGHWAY
ASS
W. PRESIDENT ST.
NORTHRUP AVE.
COLLEGE AVE.
2a
1a
BLOCK C
BLOCK D
2b
3a
GARFIELD AVE.

Comparable #3b (500' from right-of-way) Purchase Price	$14,500
Living space: 10 rooms, 2 baths, 2,650 sq. ft.	+300
Age & condition: 45 years; fair	-500
Heat: 2 oil conversion burners	0
Garage: 2-car, frame	0
Lot size: 30' x 125'	0
Date of sale: 12/31/57 (2% x $14,500)	-300
Indicated Relative Value of Subject	$14,000

Subject #4. The building contains 9 rooms and 2 baths in 2,290 square feet of living area. It is 54 years old and in below average condition. It has two gas conversion burners. There is a 2-car frame garage. The lot size is 30' x 157'. (The rear of this building is located 120' from the right-of-way.)

Purchased: 5/13/57 Purchase Price	$13,000
Comparable #4a (270' from right-of-way) Purchase Price	$17,500
Living space: 9 rooms, 2 baths, 2,256 sq. ft. plus 2 finished rooms in basement	-1,500
Age & condition: 55 years; good	-750
Heat: 2 new gas-fired furnaces	-750
Garage: 3-car, brick	-300
Lot size: 30' x 165'	0
Date of sale: 5/13/57	0
Indicated Relative Value of Subject	$14,200
Comparable #4b (170' from right-of-way) Purchase Price	$14,750
Living space: 9 rooms, 2 baths, 2,298 sq. ft.	0
Age & condition: 53 years; average	-500
Heat: 2 gas conversion units	0
Garage: 2-car, brick	-100
Lot size: 30' x 125'	+150
Date of sale: 9/24/59 (3% x $14,750)	-400
Indicated Relative Value of Subject	$13,900

SUMMARY OF COMPARATIVE VALUES AND DISCREPANCIES
AFTER ADJUSTMENT FOR PHYSICAL VARIATIONS

Subject	Distance from R/W	Purchase Price	Comparable	Distance from R/W	Indicated Relative Value	Discrepancy	Average Discrepancy
#1	75'	$10,500	#1a	500'	$11,600	$1,100	$1,425
			#1b	335'	12,250	1,750	
#2	110'	10,500	#2a	500'	11,950	1,450	1,725
			#2b	625'	12,500	2,000	
#3	125'	12,600	#3a	625'	13,800	1,200	1,300
			#3b	500'	14,000	1,400	
#4	120'	13,000	#4a	270'	14,200	1,200	1,050
			#4b	170'	13,900	900	

An examination of the foregoing table reveals that there are discrepancies between the Indicated Relative Values, derived from adjusted market data, and the actual Purchase Prices of the subject properties located on the perimeter of the highway. It is our conclusion that this discrepancy in each case is attributable to the proximity of the highway which adversely influences market value.

The plat shows the location of the highway in relation to the properties studied, which are located in Block "A." Three are on the south side of W. President Street and the fourth fronts on the north side of College Avenue. (These are designated as 1, 2, 3, and 4 on the plat.) They are subject to almost constant traffic noise from the highway. Such noise reaches peak levels during morning and evening rush hours. The blocks designated as "B," "C," and "D" are developed with similar buildings and have a neighborhood environment which is the same as that of Block "A." The one distinguishing feature is that they are more remote from the highway.

The two buildings closest to the highway, #1 and #2, which are 75 and 110 feet distant, showed the highest losses in value, between $1,100 and $2,000. The other two buildings, #3 and #4, are 120 and 125 feet distant and suffered losses in value between $900 and $1,400. The conclusion we can draw from this is that it is proper to assign a gradation of depreciation which declines as the distance from the highway increases. Another observation which can be made from this analysis is that buildings screened from the highway noise apparently do not lose value, even though they are in proximate locations. Three of the comparable properties, 1b, 4a, and 4b, are located in blocks severed by the highway, and two of these are less than 300 feet from its edge, but in each case another building intercepts the highway noise. An examination of their purchase prices reveals that they are not adversely influenced by the highway.

In the process of making this study many of the residents in the area immediately adjoining the highway were questioned as to whether the noise was disagreeable and almost without exception they answered that they were accustomed to it. However, this does not relieve the effect it might have on a prospective purchaser visiting the neighborhood for the first time. It seems reasonable to assume that a certain percentage of prospects would not want to live in the area, even if a building could be purchased at a bargain. Consequently, the number of potential buyers is immediately reduced. To use a comparison from basic principles of economics, if the supply remains constant and the demand is reduced, then the price of a commodity will fall. This result may be implemented through the operation of one or both of two forces. A property which is attractive to few purchasers usually remains on the market longer than normal. This may encourage the seller to reduce the price. Likewise, most of the purchasers who would be willing to live in the location would expect to buy at a bargain price.

This poses the interesting question as to whether there is any difference in the amount a purchaser who intends to live in the building is willing to pay as opposed to one who is purchasing the property as an investment. Two of the subject buildings, #1 and #3, are now owner occupied. The owner of #2 was an occupant for some time after purchase, but since then has moved to a different location. The owner of building #4 purchased the property without intending to occupy it. Reference to the table on page 78 indicates that #3 and #4 suffered the least reduction in value. In one case the owner intended to occupy the premises and in the other he did not. We believe the evidence is inconclusive on this point.

On the basis of this analysis and our past experience with similar situations, we are of the general opinion that residential property in close proximity to a highway suffers some loss in value. How much, of course, depends on the individual case. Road grade, intensity of use, traffic noise, character of the neighborhood, price range, and distance from the highway are the most important factors to be considered. For example, in this instance the properties studied are in the $10,500 to $13,000 price range. More expensive properties would suffer loss in value to a greater degree and less expensive properties would not suffer as much loss. In any event, we strongly recommend a careful analysis of market data as a means of measuring the effect of economic obsolescence of this type.

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